



# TEST AND EVALUATION OVERVIEW

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# **TEST AND EVALUATION GOVERNING DOCUMENTS**



- TITLE 10 U.S. CODE (VARIOUS SECTIONS)
- DoDD 5000-1 DEFENSE ACQUISITION
- DoD 5000.2-R DEFENSE ACQUISITION MANAGEMENT  
POLICIES AND PROCEDURES
- MILITARY SERVICE GENERATED AUGMENTATION TEST AND  
EVALUATION DOCUMENTS (ARMY: AR 70-1, AR 70-3;  
DA PAM 73-1 THRU 73-7)



# TEST AND EVALUATION DEFINITIONS/TERMS:



- **TEST**

PROGRAM, PROCEDURE, OR PROCESS TO OBTAIN, VERIFY, OR PROVIDE DATA FOR ASSESSING SYSTEM/PRODUCT STATED OBJECTIVES

- **EVALUATION**

REVIEW, ANALYSIS, AND ASSESSMENT OF DATA OBTAINED FROM TESTING OR OTHER SOURCES TO DETERMINE THE DEGREE TO WHICH THE SYSTEM/PRODUCT MEETS EXCEEDS, OR FAILS TO MEET ITS STATED OBJECTIVES

- **TEST AND EVALUATION**

PROCESS BY WHICH A SYSTEM/PRODUCT IS COMPARED AGAINST REQUIREMENTS AND SPECIFICATIONS



# TEST AND EVALUATION DEFINITIONS/TERMS (CONT'D):



- **TEST INTEGRATED PRODUCT TEAM**

SELECTED WORKING GROUP REPRESENTATIVES FROM EACH ORGANIZATION INVOLVED WITH THE TEST PROGRAM. EMPOWERED BY THE PM INTEGRATES TEST REQUIREMENTS AND ASSISTS IN THE TEMP DEVELOPMENT

- **CRITICAL OPERATIONAL ISSUE (COI)**

OPERATIONAL EFFECTIVENESS AND SUITABILITY ISSUES (NOT PARAMETERS, OBJECTIVES, OR THRESHOLDS) THAT MUST BE EXAMINED IN OT&E TO EVALUATE THE SYSTEMS/PRODUCTS CAPABILITY TO PERFORM ITS MISSION

- **MEASURE OF EFFECTIVENESS AND SUITABILITY (MOE/MOS)**

OPERATIONAL EFFECTIVENESS AND SUITABILITY PARAMETERS AND CONSTRAINTS INCLUDE MANPOWER, PERSONNEL, TRAINING, SOFTWARE, COMPUTER RESOURCES, COMPATABILITY, INTEROPERABILITY, INTEGRATION

- **MEASURE OF PERFORMANCE (MOP)**

MEASURE OF THE TECHNICAL LEVEL OF PERFORMANCE EXPRESSED IN DISTINCTLY QUANTIFIABLE FEATURES



# TEST AND EVALUATION DEFINITIONS/TERMS (CONT'D):



- **KEY PERFORMANCE PARAMETER (KPP)**  
CAPABILITY OR CHARACTERISTIC SO SIGNIFICANT  
THAT THE FAILURE TO MEET THRESHOLD CAUSES SYSTEM/PRODUCT  
RE-EVALUATION, RE-ASSESSMENT, OR TERMINATION
- **THRESHOLD (T)**  
MINIMUM ACCEPTABLE VALUE THAT, IN THE USER'S JUDGEMENT, IS  
NECESSARY TO SATISFY THE NEED. IF NOT ACHIEVED, PERFORMANCE  
IS SERIOUSLY DEGRADED, TOO COSTLY, OR NOT TIMELY
- **OBJECTIVE (O)**  
VALUE DESIRED BY USER AND PM IS ATTEMPTING TO ATTAIN. OPERATIONALLY  
MEANINGFUL, TIME CRITICAL, AND COST-EFFECTIVE INCREMENT ABOVE THE  
THRESHOLD



# TEST AND EVALUATION DEFINITIONS/TERMS (CONT'D):



- **CRITICAL TECHNICAL PARAMETER (CTP)**  
DERIVED FROM THE ORD, CRITICAL SYSTEM CHARACTERISTICS, AND TECHNICAL PERFORMANCE MEASURES
- **TECHNICAL PERFORMANCE MEASURE (TPM)**  
PERFORMANCE METRIC TO MEASURE HOW WELL THE TECHNICAL DEVELOPMENT AND DESIGN ARE EVOLVING RELATIVE TO SYSTEM/PRODUCT REQUIREMENTS IN TERMS OF PERFORMANCE, RISK MITIGATION, PRODUCIBILITY, COST, AND SCHEDULE. MUST BE TRACEABLE TO PERFORMANCE PARAMETERS IDENTIFIED BY OPERATIONAL USER
- **OPERATIONAL TEST READINESS REVIEW (OTRR)**  
ASSESS THE READINESS OF THE SYSTEM/PRODUCT, TEST PLANNING, EVALUATION PLANNING, AND ANY OTHER AREA REQUIRED TO SUPPORT THE CONDUCT OF THE TEST



# **TYPES OF PRIMARY TEST AND EVALUATIONS FOR DoDIIS ACQUISITIONS**



- **DEVELOPMENTAL TEST AND EVALUATION (DT&E) OR (DT)**  
FACTORY ACCEPTANCE TEST (FAT)  
BETA I  
IN PLANT ACCEPTANCE TEST (IPAT)
- **OPERATIONAL TEST AND EVALUATION (OT&E)OR(OT)**  
BETA II/OPEVAL  
INITIAL OPERATIONAL TEST AND EVALUATION (IOT&E)  
FOLLOW-ON TEST AND EVALUATION (FOT&E)





# DEVELOPMENTAL T&E AND OPERATIONAL T&E DIFFERENCES



DT	OT&E
<ul style="list-style-type: none"><li>• CONTROLLED BY PROGRAM MANAGER</li><li>• ONE-ON-ONE TESTS</li><li>• CONTROLLED ENVIRONMENT</li><li>• CONTRACTOR INVOLVEMENT</li><li>• TRAINED, EXPERIENCED OPERATORS</li><li>• PRECISE PERFORMANCE OBJECTIVES AND THRESHOLD MEASUREMENT</li><li>• TEST TO SPECIFICATION</li><li>• DEVELOPMENT TEST ARTICLE</li></ul>	<ul style="list-style-type: none"><li>• CONTROLLED BY INDEPENDENT AGENCY</li><li>• MANY-ON-MANY TESTS</li><li>• REALISTIC/TACTICAL USER ENVIRONMENT WITH OPERATIONAL SCENARIO</li><li>• RESTRICTED SYSTEM CONTRACTOR INVOLVEMENT</li><li>• USER TROOPS RECENTLY TRAINED ON EQUIPMENT</li><li>• PERFORMANCE MEASUREMENT OF OPERATIONAL EFFECTIVENESS AND SUITABILITY</li><li>• TEST TO REQUIREMENTS</li><li>• PRODUCTION REPRESENTATIVE TEST ARTICLE</li></ul>



# TYPES OF TEST AND EVALUATION SOURCE DOCUMENTS



- **MISSION NEED STATEMENT (MNS)**  
IDENTIFIES DEFICIENCIES IN CURRENT SYSTEM/  
PRODUCT/MISSION PERFORMANCE
- **OPERATIONAL REQUIREMENTS DOCUMENT (ORD)**  
ADDRESSES PERFORMANCE PARAMETERS WITH KEY PERFORMANCE  
PARAMETERS THRESHOLDS AND OBJECTIVES
- **CONCEPT OF OPERATION (CONOP)**  
PLANNING DOCUMENT FOR DEPLOYMENT AND USER  
UTILIZATION OF SYSTEM/PRODUCT IN ACCORDANCE  
WITH THE ORD
- **TEST AND EVALUATION MASTER PLAN (TEMP)**  
BASIC PLANNING DOCUMENT FOR ALL LIFE CYCLE TEST AND  
EVALUATION (T&E) AND USED BY ALL DECISION BODIES IN  
PLANNING, REVIEWING, AND APPROVING T&E ACTIVITY. PROVIDES  
FRAMEWORK WHICH TO GENERATE DETAILED TEST AND EVALUATION  
PLANS



# **OPERATIONAL TEST AND EVALUATION (OT&E) PROCESS**



- **PROVIDES DECISION AUTHORITY WITH AN ESTIMATE OF**
  - DEGREE OF SATISFACTION OF USER'S REQUIREMENTS EXPRESSED AS OPERATIONAL EFFECTIVENESS AND OPERATIONAL SUITABILITY
  - THE SYSTEM/PRODUCTS DESIREABILITY
  - THE NEED FOR FURTHER DEVELOPMENT OF THE NEW SYSTEM/PRODUCT
  - VERIFY OPERATING DOCUMENTATION
- **CONDUCTED BY INDEPENDENT OT&E ACTIVITY**

OT&E ACTIVITY WHICH IS INDEPENDENT OF MATERIEL DEVELOPMENT AGENCY/INTEGRATING CONTRACTOR ACCOMPLISHED BY TYPICAL USER OPERATIONAL AND SUPPORT PERSONNEL IN A REALISTIC USER OPERATIONAL ENVIRONMENT



# **OPERATIONAL TEST AND EVALUATION METHODOLOGY**



- **METHODOLOGY:**
  - REVIEW SOURCE DOCUMENTS
  - EXTRACT COIs FROM TEMP
  - CREATE MOEs/MOSs/MOPs BASED ON ORD TO EXAMINE COIs
  - EXTRACT SCENARIOS AND PREPARE SCRIPTS BASED ON CONOP
  - BUILD SURVEYS/QUESTIONNAIRES
  - PREPARE/COORDINATE DETAIL TEST PLAN WITH OFFICES OF PRIMARY INTEREST (OPI'S)



# **OPERATIONAL TEST AND EVALUATION CONDUCT**



- ORCHESTRATE AND HOLD UP TO 3 OTRRs
- CONDUCT PILOT TEST
- COMMENCE/CONDUCT TEST IAW OPI APPROVED TEST PLAN
- PERFORM OBSERVATIONS BY DATA COLLECTORS
- ADMINISTER SURVEYS



# **OPERATIONAL TEST AND EVALUATION CONDUCT (CONT'D)**



- INTERVIEW SURVEY PARTICIPANTS
- OUTBRIEF QUICK-LOOK OF PRELIMINARY FINDINGS
- CONDUCT DATA AUTHENTICATION GROUP (DAG) REVIEW  
(TEST TEAM, PMO REPRESENTATIVES, OPI'S)
- PERFORM ANALYSIS AND EVALUATION OF COLLECTED DATA
- PREPARE/DISTRIBUTE TEST EVALUATION REPORT



**QUESTIONS?**